THE

VETERINARY JOURNAL

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Editorial.

ON DOING OUR BIT.

THOUGHTS on the welfare of his country loom largely in the mind of every Britisher at present. Each in his own way is inclined to do what he can to help her in this time of stress and strain. The younger members of our body have responded largely to the military call, and are doing good work in their respective spheres—they are aiding directly in shortening the long, long trail. Their youthful energy and keenness will find joy and satisfaction in carrying out exacting work in an atmosphere of danger and adventure. They are up against the real thing, and count as valuable units of the first line in the defence and salvation of our country. All honour to them; may their work and effort bear full fruition, and may we at home remember the sacrifices that have been made by those who " for our sakes without question put from them all that they cherished." The young, the vigorous, and the strong have not lived for themselves alone. They have cast their eyes beyond self-interest, the parish, and the pump, and, as is the way of youth, have taken a bee-line for the sake of "England, home, and beauty."

And what of those of us who are left here? Are we to be found lacking or wanting? Important work remains to be done by those who have got into stiff moulds, who are somewhat unadaptable and inelastic, who have lost the enthusiasm and go of early years, who consider themselves physically or mentally unfit for the very strenuous life. Some of us, beyond the meridian, are inclined to be a little depressed as to our fitness for service of any kind, and to be doubtful as to the way in which

we may be able to further the great cause. We can satisfy ourselves that we need not be among the non-starters if we take a wide and discerning look around and bear in mind that "he is a slave of the greatest slave who serves nothing but himself."

The need is for men, food, money, and munitions. The present price of the vital necessities of life is a continual reminder of the importance of increasing the country's food production and supply. Many a veterinary surgeon has a kitchen garden that can produce desirable vegetables and fruit. Let it be carrying top weight, let no ground be left unproductive or unfruitful. Not a few men have a direct interest in animal production. He who does his best in increasing the output, whether his skill and attention be devoted to the breeding of horses, cattle, sheep, pigs, fowls, or goats, is aiding his native land.

Then there is the money question! What an eternal, never-failing, ever-pressing struggle ranges round it. The everlasting bills and bills and the everlasting money! There is only a certain quantity of it in the world, which accounts for the flowery way of the financier. Some men acquire more wealth than others, but most of us manage to get a bit of it. In days gone by there were two chief troubles associated with it. One was getting it, and the other knowing what to do with it when we had got it. At the present time the latter proposition is no puzzle at all, for are there not War Loan and Exchequer Bond securities waiting to be culled and cuddled—securities of the gilt-edged stamp returning desirable rates of interest?

Again, collectively, we can all subscribe to the Royal College of Veterinary Surgeons, and by doing it whole-heartedly we can give our Council a surplus to invest for the welfare and salvation of our country. This is the least any man can do, and nobody ought to leave room to have a row with his conscience for not doing it. It is a bare minimum of sacrifice that can be asked and given. Then there is the Army Veterinary Corps Comfort Fund. It has gone well up to the present. It ought not to be forgotten. It helps to keep a deserving body of men fit, for it provides means to preserve and maintain health, to keep heart in those who have to do their duty under trying circumstances, who value help and sympathy, and are always ready to express their gratitude. Provision for keeping active units in good form who are directly operating for their country's sake is fine service. Individually and collectively, then, we can see ways and means to do our bit for the defence and safety of our land.

What of munitions? Most of us will perhaps exclaim, What can we do in this connection? Well, parsons, and what the

lords of creation have been pleased to term "the weaker sex," are helping to make shells, and are we to be beaten and outstripped by them? A veterinary surgeon on a big gun would doubtless be like a fish out of water, but there are those who have the mechanic's eye and touch that ought to be useful in this domain.

By some the shoeing forge is considered derogatory to the practice of veterinary science and art, but many of us have them, and the Army authorities can take horse shoes. We can help to satisfy their need.

In future years let it not be said that the veterinary profession did not do its full share in the great struggle. We are a small body, but let us be large in our supply of pluck, energy, foresight, resource and patriotism. Let us all appreciate and answer to the full the call in the lines which read:—

> **"Breathes there the man, with soul so dead,**
> **Who never to himself hath said,**
> **This is my own, my native land!"**

G. M.

INTERESTING CONTRIBUTIONS.

We are publishing this month the second Australian Supplement, which ought to be of great interest to readers in the Homeland. There is hardly any disease from a veterinary point of view that calls for more attention as regards research and observation than that dealing with the structure of bone in health and disease. The paper by Mr. W. T. Kendall, D.V.Sc., M.R.C.V.S., throws a new light on the subject, is well thought out, and results from a crowd of experience that we are unable to get in this country. The note by Mr. J. C. Lewis, D.V.Sc., B.Sc., on "Thrombosis of the Spermatic Veins," is a valuable contribution. Many of us in examining entire stock and in the examination of horses as to soundness encounter swellings in the scrotal region which in many cases are difficult to describe accurately. The more really scientific observation on the matter the better. We welcome the work of our Australian *confrères*, and congratulate Major H. A. Woodruff and Major F. Hobday on the real service they have been able to institute and inaugurate on behalf of veterinary science.

There is also in this number a valuable little note by Mr. H. L. Roberts, F.R.C.V.S., on coital exanthema. The disease has been observed frequently on the Continent, but there is little, if any, reference to it here. We shall welcome any future contribution on the matter from country practitioners. The complaint is very important from the stockowners' and breeders' point of view, and a full description of the clinical symptoms in the male and female will benefit us.

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Original Communication.

PARALYSIS OF THE AUDITORY NERVE OF THE FOWL.

By B. F. KAUPP, M.S., D.V.M.
Pathologist, N.C. Experiment Station.

Anatomy of the Parts.

It may be well to give first the origin and distribution of the auditory nerve before taking up the disease of the same.

In the fowl the facial (seventh pair of cranial nerves) and the auditory, or eighth pair, are so intimately associated, that we will describe the origin and distribution of both at the same time.

The facial nerve originates, with the auditory, from the cerebellum. It divides into three parts, the first probably the complex ganglion, with the posterior root of the auditory. This root belongs to the somatic sensory group of nerves. From this same group originates the auditory, which spreads out into the cochlea and takes the impression of sound. This nerve is short and thick, and at the point where it loses is medullary covering on entering the cochlea there is developed a ganglion. This ganglion is similar to the spinal ganglion.

The second part originates by one root which is located medially and ventrally from the deeper ganglion cells. Some of the fibres from this root constitute the vestibular branches and accompany the auditory, and supply the anterior part of the ear labyrinth and semicircular canals. The larger part of the fibres of this trunk make up the intermediate part of the facial. The geniculate ganglion is formed at their fusion. The sympathetic spheno-palatine nerve emerges from this ganglion, coming out of the aqueduct of Fallopius.

The third part is called the portia dura, and is the main facialis. It is located opposite the auditorius intermedius. Its roots may be traced to the complex ganglion, from which they take a ventral direction.

Paralysis of the Cochlear Nerve.

The paralysis of the cochlear nerve, the true organ of hearing, may be a congenital defect, and has been observed in ambiotic animals. It is due to a defective condition of the spinal ganglion

with resulting degeneration of the organs of Corti. Paralysis of the nerve may also be caused by inflammatory changes in the internal ear, or intracranial disease in the neighbourhood of the medulla oblongata. It has been observed as a symptom in coccidiosis, and also in fowl plague.

Paralysis of the Vestibular Nerve.

This condition is frequently observed in birds. It is often caused by inflammation of the middle or internal ear. It has been observed in fowl pest. This condition is also brought about in caries of the petros temporal bone. Concussion of the brain and hæmorrhage of the internal ear is also a causative factor. Certain disease conditions of the cerebellum and medulla oblongata may cause an interruption in the conductivity of the vestibular nerve. In pigeons it is observed in contagious meningitis.

The symptoms of bilateral disease of the cochlear nerve is easily recognized owing to the fact that there is complete deafness. If it is unilateral, the symptoms may be so meagre that its presence entirely escapes the observation of the owner.

Unilateral paralysis of the vestibular nerve is evidenced in all species by the head being held in an oblique manner, the diseased side being held lower. The head may be held in a position under the front part of the body, with the lower part of the head turned back towards the sound side. This turning of the head may be slight or 45° to 75°, but in birds it may be as much as 180°, or even more. If the head be carried under the body the roof of the cranium may touch the ground. The abnormal position of the head causes the animal, if they try to move at all, to walk in a circle towards the sound side, but sometimes in the opposite direction, or, at any rate, they cannot walk in a straight line. There is frequently a horizontal rolling of the eyeballs towards the sound side with conjugate position of the eyeballs. There may be difficulty in taking food, and in birds it is commonly quite impossible. If the disease is bilateral it closely resembles cerebellar ataxia, only the symptoms are limited to the head and neck.

If the paralysis is due to an injury the disease, as a rule, is not permanent, and the symptoms all disappear in a few days or weeks. If the condition is due to pathological changes in the

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auditory nerve or nerves the symptoms are persistent, depending on the nature of the primary cause. The bird may after a while die.

In traumatic causes the bird should be kept in a quiet place free from annoyances, and, if necessary, artificial feeding. If there has been an injury and hæmorrhage taken place in the tissues, surgical interference may be indicated. In cases in pigeons due to contagious meningitis, an attempt should be made to isolate the diseased bird and carry out thorough disinfections. Calomel should be given to the bird, and cold-water packs applied to the head.

Cases of Vestibular Paralysis.

Fig. 1 shows a picture of a single comb Rhode Island red hen which was sent to the laboratory from the Iredell Test Farm. This hen had the run of the farm with the balance of the flock. She was about 2 years old.

There was nothing in the history of the case to indicate

FIG. 1.—Paralysis of the auditory nerve of a fowl.

whether the hen had met with an accident or had a diseased condition of the auditory nerve. The bird, as is shown in the cut, held her head backwards, and turned at an angle of about 45°. A thorough examination of the external auditory canals did not reveal any signs of violence or parasitism. Eating was accomplished with difficulty, and the bird, after suffering in this manner for a period of sixty days, died.

A second case in which the bird showed similar symptoms, and in which examination of the auditory canals and skull were negative, after a period of five weeks gradually showed signs of improvement, and finally recovered.

A very interesting case came to the notice of the laboratory.

A lot of baby chicks, consisting of Buff Plymouth Rocks, were taken from the mammoth incubator, March 5, 1916. On March 15 one of the birds, which had been brooded in an international hover, showed symptoms of paralysis of the auditory nerves. This chick could eat and drink with some considerable effort, but would again turn its head downwards under the fore part of the body until the top of the cranium touched the floor. The head was held only slightly to one side. It was thought that

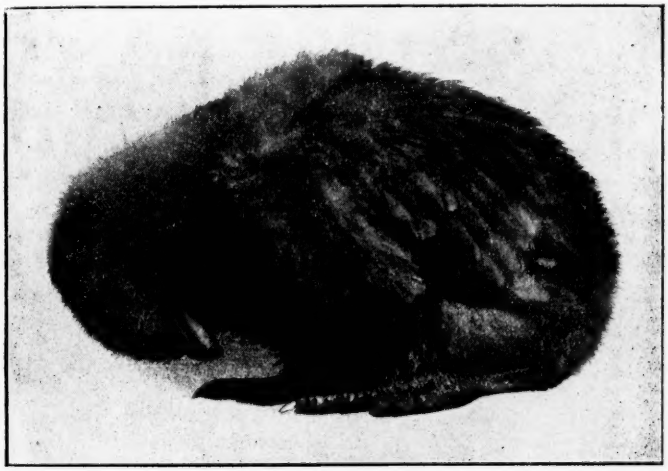

FIG. 2.—Paralysis of the auditory nerve of a baby chick.

possibly this chick had sustained an injury to its head. It was leg-banded and returned to the hover. In a few days some improvement was noted, and complete recovery taken place in three weeks from the time the first symptoms was noted. It is believed this condition was due to an injury. (See fig. 2.)

A fourth case was studied in a flock of 500 baby chicks, all being pure bred Single-comb White Leghorns. The chicks were hatched in an international incubator and brooded in an international hover. On the third day one chick was noted to turn its head at an angle of about 45° and turn in a circle to the left. This antic was frequently indulged in; the bird could not eat except when aided. Its appetite was good, and it frequently

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acted as though hungry. This chick was kept for experimental purposes, being aided in securing food, but the condition apparently interfered with nutrition, and the chick showed no growth, rapidly falling behind the balance of the flock, and finally died when about three weeks old.

Pox of Turkeys.

We have been studying a condition among turkeys in this laboratory for the past few months. This condition appears different from any disease we have heretofore studied, and we find that it is, in some years, quite prevalent in the south-eastern States and in Cuba.

The turkeys brought to the laboratory were kept in a back yard of a city residence. There were four in the flock, and one after the other had become affected.

From the standpoint of a field study it appears to be contagious.

The poxes are noted on the unfeathered portions of the head and neck. There is at first noted a small pimple-like elevation, which gradually becomes larger, and in the course of a few days may appear 4, or even 5 cm. in diameter, and 2 or 3 cm. high (see fig. 3, No. 1). They do not appear as does chicken-pox, as observed upon the fowl—that is, there is no rounded bleb-like appearance, but, on the other hand, appear with almost perpendicular walls with a flat top, and may be likened to the shape of an opera hat (see fig. 3, No. 2).

In the course of a few days, in many cases without any treatment, the diseased area becomes dry and may be picked off, leaving a whitish scar-like spot (see fig. 3, No. 3). The disease usually does not appear very virulent, and little or no treatment is required. In some cases where we have advised the use of a 5 per cent. carbolized vaseline excellent results have been reported. Then, again, where we have had some cases under our own observation they recovered without any treatment. However, there can be little doubt but that at times the attacks are rather severe, and may even cause death. While this has been reported to us upon good reliable sources, yet we have not personally made such observations. The cases studied in the laboratory did not appear to suffer constitutionally, as there was no loss of appetite, and the birds were in good flesh.

Only one test was made to determine if the disease could be transmitted. The curetting from a flesh nodule was rubbed in a scarified area of the comb of a three-year-old White Orpington cock. The results of this one test were negative. No opportunity was afforded to conduct experiments upon turkeys not exposed to the disease, though such procedure is contemplated.

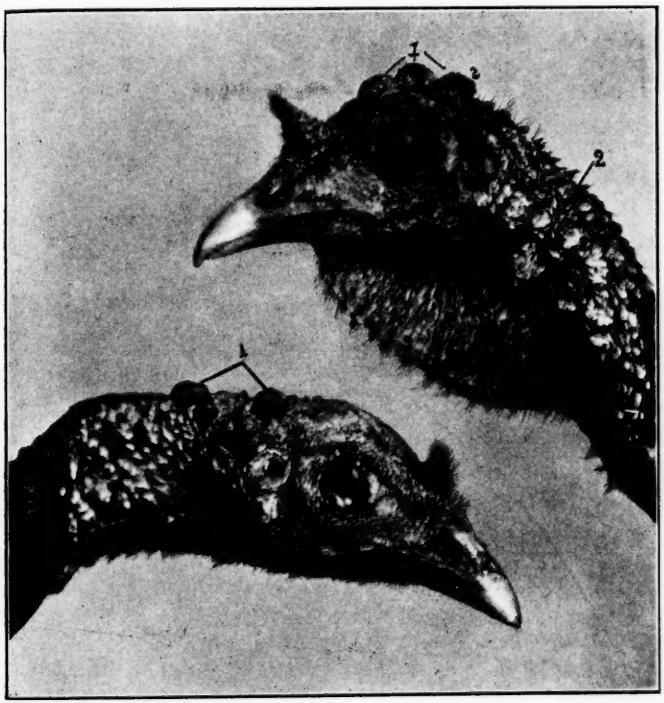

FIG. 3.—A peculiar acute nodular disease of the heads of turkeys, in some respects simulating chicken-pox.

HORNY GROWTHS ON THE CUTICULAR SURFACE OF FOWLS.

Horny growths are reported as occurring on the cuticular surfaces of fowls by Gadow. Horny growths have been observed on the cuticular surfaces, and on different parts of the body of cattle and other animals.

The present case is of importance on account of its immense size as compared to the size of bird upon which it was found.

Dr. Leonard, of Asheville, sent to this laboratory a specimen represented in fig. 4 with the case history that it was excised from the thigh region of a two-year-old hen. No further history could be obtained. The specimen measured 14 cm. long and

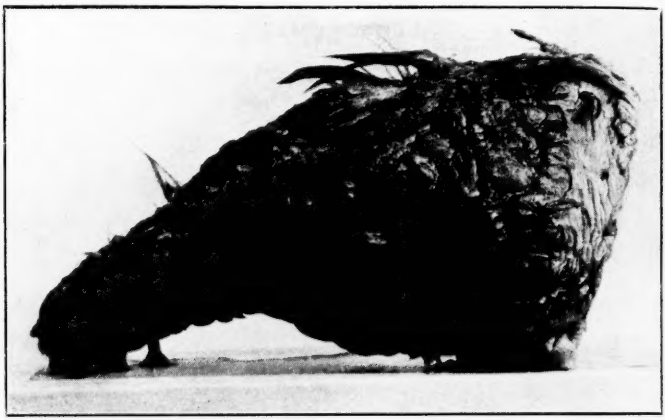

FIG. 4.—A horny growth from the thigh of a fowl.

7·5 cm. in diameter at the base. The outer structure is horny-like, resembling the horny structure of the spur or claw. There will be noted here and there a feather which has developed. The inner core consists of connective tissue and some adipose tissue, and is soft in texture.

AUSTRALIAN SUPPLEMENT
OF THE
"VETERINARY JOURNAL."
By Members of the Staff of the Veterinary School, Melbourne University, Australia.

OSSEOUS DISEASES IN AUSTRALIA.

By W. T. KENDALL, D.V.Sc., M.R.C.V.S.

Bone diseases that are known by different names in different localities are of frequent occurrence, more especially in the coastal regions of Australia.

The so-called cripples, rickets and coast disease in cattle, nasal disease in horses, brittle bones in sheep, and cripples in swine are examples of the terminology in use amongst stock-owners, while osteo-porosis, osteo-malacia, fragillitas osseum and mollitis osseum, &c., are spoken of by veterinary surgeons. The latter names are no more applicable than the former, for in many instances all these pathological conditions are met with in the same animal.

Bone diseases, however, are not nearly so prevalent in farm stock now as they were thirty or forty years ago, for the reason that the soil and climatic conditions which give rise to them, though still existent, are better understood, and effective means of prevention are adopted. In the early days of colonization it was found that if young animals, especially cattle and horses, were allowed to graze too long on poor, innutritious, and indigestible grasses grown on the sandy, heather-covered coastal districts, they almost invariably became rickety, but that, if removed inland to better soil and pasturage during certain times of the year, many escaped an attack, and even affected animals often recovered.

It was found that adult animals, especially heavy milking cows, were very liable to become affected with cripples on poor granity soils, particularly during long periods of drought, and experience has taught the dairy farmers that the disease may be prevented and often cured by giving the cows the separated milk to drink and providing them with a good allowance of bran.

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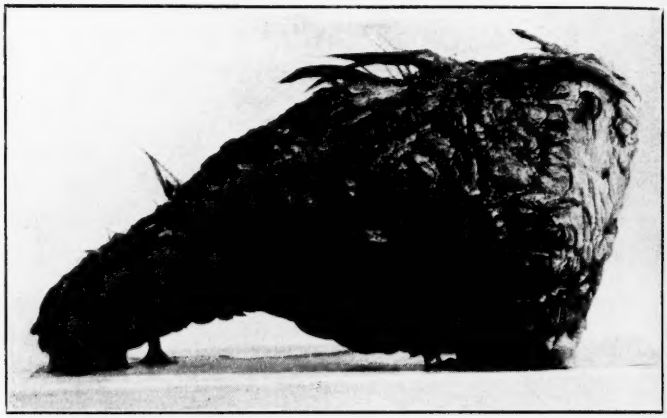

FIG. 4.—A horny growth from the thigh of a fowl.

7·5 cm. in diameter at the base. The outer structure is horny-like, resembling the horny structure of the spur or claw. There will be noted here and there a feather which has developed. The inner core consists of connective tissue and some adipose tissue, and is soft in texture.

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General Article.

THE PRESENT AND FUTURE MEAT SUPPLY AND THE QUESTION OF THE FREE IMPORTATION OF CANADIAN CATTLE.

By THOMAS PARKER, F.R.C.V.S.

Veterinary Inspector under the Diseases of Animals Acts, and Inspector of Meat, Provisions, &c., for the City and County of Newcastle-upon-Tyne.

During recent years the problem of how to maintain within this country a supply of meat, sufficiently abundant to be within the reach of all classes, has been certainly—if gradually—becoming more and more difficult. Owing to the gradual increase in the price of meat before the War and the further increases since, farmers and stock-breeders have been more or less tempted to hurry into the markets animals which would under ordinary circumstances have been kept a longer period, either for breeding purposes or to be fed to maturity as the case may be.

For example, one of the causes of the shortage of cattle is attributed by the Board of Agriculture and Fisheries to the slaughter of calves, either immaturely or legitimately fattened. Similarly, the increased slaughter of not only lambs but also of breeding ewes has gone on rapidly, due to the increased prices of mutton. In fact, the total number of sheep recorded for England and Wales in the year 1913 was the smallest on record, being 5 per cent. less than in 1912. But no matter in what part of these islands such a short-sighted policy is allowed to go on unchecked, the whole of the United Kingdom will ultimately suffer. Remember, we are far from being self-supporting.

According to agricultural statistics for the year 1913, it is estimated that of the total meat supplies of the United Kingdom about two-fifths are imported from over the seas. Moreover, it is generally admitted that the world's meat supplies have been found during the past year or two to be rather less than hitherto.

Whilst the whole of Europe is not always at war, the United Kingdom is, nevertheless, always in the peculiar position of being separated from considerable sources of her food supplies by large stretches of sea.

The reasons why the subject is one that should seriously

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engage public attention at the present time may perhaps be best considered under the following heads, namely:—

I.—Reasons why meat was getting dearer before the War.
II.—Reasons for very high prices during the War.
III.—How to provide for the future.

I. Reasons why Meat was getting Dearer before the War.

For many years the population of the United Kingdom has been increasing at the rate of about 400,000, or two-fifths of a million annually. In the year 1893 it was 38,429,992, whereas twenty years later—that is to say, in the year 1913—the population of the United Kingdom had reached a total of 46,035,570. It was only natural, therefore, to expect that the total amount of food required annually had also increased enormously, although without any material alteration proportionately, to the individual. But we find that, during the same period, the total amount of meat obtainable annually from our home-bred herds has not increased in anything like the rate necessary to supply a proportion per head of the population in 1913 equal to that available twenty years earlier, *e.g.*, in the year 1893 we had in the United Kingdom some 11,207,585 cattle, 31,774,686 sheep, and 3,278,082 swine, from which we expected about 28,000,000 cwt. of meat per annum; whilst in the year 1913 there were only 11,936,600 cattle, 27,629,206 sheep, and 3,305,771 pigs, which together were capable of producing an annual total of between 30,000,000 and 31,000,000 cwt. of meat. It will be noticed that whilst cattle and pigs show a slight increase, sheep show a considerable decrease in numbers.

Now owing to the rate of increase of the population being not only much faster, but out of all proportion to that of the increase of the total amount of food available from our herds, the quantity necessary to make up for the deficiency and meet the demands had to be obtained either by the importation of live cattle, dead meat, or both.

First let us consider the cattle imports. In the year 1894 there were imported into the United Kingdom 475,440 cattle, 484,597 sheep, and 8 swine, whereas in the year 1914 there were only 2,234 cattle and 1,707 sheep imported. It will therefore be observed that our food supplies as derived from imported live stock have—for all practical purposes—been reduced to *nil*. And

this latter reduction had nothing whatever to do with the War. On the other hand, the total imports of beef, mutton, pork, bacon, hams, &c., have increased from 9,304,664 cwt. in the year 1893 up to 22,752,652 cwt. in the year 1913. Notwithstanding this huge increase in the imports of dead meat during the past twenty years, it should be borne in mind that the greater part of that increase occurred during the first eight years, for during the past twelve years the imported meat supplies have remained very nearly stationary. Moreover, it is evident that competition for these foodstuffs is so developing through the requirements of other countries, that as a result the supplies available for export to this country are likely to either decrease or fail to meet our demands.

Finally, after deducting exports from this country, when we compare the sum total of meat obtained from home-bred and imported animals, and imported carcases, &c., available in the year 1893, with that of the meat obtained in precisely the same way in the year 1913, we find that whilst on the one hand the total annual supply of meat in the United Kingdom has increased, the total supply per head per annum has, on the other hand, owing to the proportionately greater increase of the population, decreased, hence the rise in price.

II. Reasons for very High Prices during the War.

The following may be accepted as being amongst the chief reasons for the great rise in the price of meat available to the general public:—

(*a*) The purchase of large quantities of frozen, chilled, and other meat (including all the meat produced at Australian and New Zealand meat works, and available for export) by the British Government, not only for troops at home and abroad, but also for use of the Allied Forces. It might be asked, "What difference does it make regarding supply and demand, whether a man be a soldier or a civilian?" The answer may be illustrated thus: Supposing 2,000,000 men join the Army, they are then fed according to Army rations. In civilian life each individual in the United Kingdom—according to official statistics issued by the Board of Agriculture for the year 1913—will find his proportion of the estimated total meat supply to be 127·6 lb. per annum. But on entering the Army the same individual would

be supplied with 1 lb. of meat daily, which is just 10½ oz. more than his total daily share in civil life. Summed up, this means that during the first fourteen months of the War 2,000,000 men in the Army would annually dispose of 4,206,080 cwt. of meat (an amount equal to one-twelfth, or 8·3 per cent. of the total amount of meat supplies of the United Kingdom), more than the total amount they would during civil life. Recently the Army rations have been reduced to ¾ lb. meat per day. Now supposing an army of 3,000,000 men are receiving ¾ lb. meat daily, that would mean that such a vast force would have issued out to them something like 3,700,000 cwt. per annum (an amount equal to nearly one-seventeenth, or about 6 per cent. of the total meat supply of the United Kingdom), more than the total amount they would during civil life.

(*b*) Fewer ships carrying meat over the seas, and increased freights.

(*c*) Owing to a considerable extent to the above circumstances, the increased cost of meat before being exported to this country, which fact is best illustrated by comparing the value of imports during the year 1914 with those of the year 1913:—

Meat imported into the United Kingdom.

Year 1913	Beef	9,203,310 cwt.	...	Value £16,070,833
	Mutton	5,388,380 ,,	...	,, 10,907,992
	Pork	495,854 ,,	...	,, 1,368,360
	Total	15,087,544 cwt.		Value £28,347,185
Year 1914	Beef	8,844,567 cwt.	...	Value £18,960,171
	Mutton	5,202,503 ,,	...	,, 11,411,423
	Pork	861,203 ,,	...	,, 2,360,722
	Total	14,908,273 cwt.		Value £32,732,316

(*d*) As an illustration of still more demands, it may be mentioned that at a meeting of mayors of chief Italian towns held in Rome some months ago, it was announced that the Government would replace the requisitions of cattle for use of the troops by the importation of large quantities of frozen meat.

III. How to Provide for the Future.

The final question we have to deal with, and perhaps the most important one, is: How can we best provide for the future? An endeavour will be made to answer that question under the following headings, namely:—

(1) The production within the herds of the United Kingdom.
(2) The importation of fresh, frozen, and chilled meat.
(3) The exportation and importation of live animals.

(1) The Production within the Herds of the United Kingdom.

The meat supply available from our herds during the past twenty years has already been referred to. Perhaps the position in regard to the production of our herds will be better understood if we look for a moment to the figures extending over the past thirty years.

In the year 1884 there were 10,423,284 cattle in the United Kingdom, whilst in 1913 there were 11,936,600. In the year 1884 there were 29,378,427 sheep, whereas in 1913 there were only 27,629,206; and whilst there were 3,906,560 swine in the year 1884, there were only 3,305,771 in the year 1913. On the other hand, the population of the United Kingdom has increased from 35,951,865 in the year 1884 to 46,431,548 in the year 1914.

It will be observed, then, that during the past thirty years, whilst the population of the United Kingdom has increased by very nearly one-third, the cattle have only increased by about one-eighth. Furthermore, when it is remembered that sheep—during the same period—have decreased by 1,749,221, or a little more than 6 per cent., and that swine have decreased in numbers by 600,789, or about 15½ per cent., it should be clearly evident that, so far as the production of meat for the nation is concerned, our home-bred stock have been gradually lagging behind.

With the view, no doubt, of combating the indiscreet slaughter of certain classes of animals, the Board of Agriculture and Fisheries have found it necessary to issue an Order known as the:—

Maintenance of Live Stock Order of 1915.

This Order came into operation on August 23 last, and provides, as from October 1, 1915, that no calf under six months old, or any animal visibly or obviously in-calf or in-pig, shall be slaughtered excepting such as are defined in the Order. It will be admitted that the Order is a step in the right direction. Unfortunately, however, there does not appear to be any possibility of the Order fulfilling the objects aimed at in anything

like the degree necessary to even approach our requirements. Moreover, the amount of land in this country upon which to rear young stock up to the age ready for fattening off is limited. We know that there were some 17,175,041 acres of arable land and 15,290,820 acres under permanent pasture thirty years ago in Great Britain, whereas to-day there are only 14,360,187 acres of arable land, or a decrease of land under crops to the extent of 2,814,854 acres, whilst permanent pasture has, on the other hand, during the past thirty years increased by 2,276,294 acres, thus making a total of 17,567,114 acres under pasture.

Again, it does not seem desirable that we should carry the breeding and rearing of live stock in this country too far at the expense of the production of other crops which are essential for the production of food for us besides providing food and bedding for the cattle produced.

(2) The Importation of Fresh, Frozen, and Chilled Meat.

It has already been pointed out that, although the annual imports of beef, mutton, and pork have greatly increased during the past twenty years, the rate of increase about twelve years ago rapidly slowed down, and that during recent years these imports have remained very nearly stationary. But considering the rate of increase of our population, and the failure of our home-bred stock to keep pace with the demands in the production of food, had it not been for the vast imports, the decrease in the proportion of meat per head per annum would have been far greater. Furthermore, we must remember that the future distinctly points to our not being in the "happy-go-lucky" position we were some ten or fifteen years ago, when we were practically the only customers for the large consignments of frozen meat turned out by American firms.

Amongst the countries exporting meat to the United Kingdom during recent years, perhaps the most important in point of quantities are to be found in the following order, namely: Argentina, Australia, United States of America, Denmark, and New Zealand. Now there are wonderful supplies of cattle and sheep in the British Empire over the seas. For example, in Australia, Canada, and New Zealand there are some 20,000,000 cattle, nearly 110,000,000 sheep, and nearly 4,500,000 pigs. In Australia and New Zealand alone there are about 107,750,000

sheep. In South Africa there are about 5,750,000 cattle, 30,000,000 sheep, and 1,000,000 swine.

As a matter of fact, we have, during recent years, depended considerably upon those sources for our supplies, consequently the imports of mutton from Australia and New Zealand have increased from 1,789,907 cwt. in 1904 up to 3,703,389 cwt. in the year 1914, or in the past ten years from about one-half up to nearly three-quarters of the total supplies of mutton imported into the United Kingdom.

The United States of America—with her population of 95,500,000 to feed—possess something like 57,750,000 cattle, 52,500,000 sheep, and 65,500,000 pigs. Instead of remaining a great source of supply, the United States appear to be gradually developing into a purchasing competitor, *e.g.*, ten years ago one-half of the beef and about five-sixths of the live cattle and sheep imported into the United Kingdom came from the United States, whereas during the year 1914 only 1,707 sheep and lambs, no cattle, and only about one-hundredth part of the beef imports came from that country.

In the United States cattle have been greatly reduced in numbers during recent years, namely, from 71,000,000 in the year 1909 to about 57,750,000 in the year 1912.

Argentina, with her 28,750,000 cattle, is no doubt the greatest exporter of beef at the present time, and her customers, like the prices of meat, seem to be on the increase.

Italy, having joined the Allies, has decided to import large supplies of frozen beef in an endeavour to save her herds. France, besides having arranged with England for the delivery between February, 1915, and February, 1916, of 231,107 tons of frozen meat, is also arranging for the importation of large quantities of chilled meat. These countries may require to import considerable quantities of frozen and chilled meat for some time after the War; in fact, there is every probability of the trade becoming, more or less, a permanent one.

The perfection of the cold storage system has created advantages and disadvantages. In the first place, owing to the fact that meat may be kept almost indefinitely, any country anticipating hostilities could store away enough to keep her going a year or two if necessary, without unduly drawing upon the herds she possessed. Perhaps the greatest disadvantage of the cold

storage system is that it might prove just too accommodating to large combines by enabling them to force the prices in any direction, excepting that which might prove detrimental to their own financial gain, by either flooding or starving the wholesale markets.

Providing that the interests of every unit of the British Empire are honestly and thoroughly promoted within, then there is no earthly reason why we should not only be in a position to supply ourselves with meat, but also to have enough to spare for export. So far as chilled and frozen meat is concerned we would have Australia, New Zealand, and eventually South Africa, as sources. On the other hand, we have, a comparatively short journey away, Canada, a vast country with wonderful possibilities for the production of vast herds. By way of assisting us to fight against a genuine shortage we must—if it is possible to guard against the introduction of contagious diseases—import live cattle, either fat or lean. Before dealing with that part of our subject, let me just refer to exactly the opposite condition.

(3) The Exportation and Importation of Live Animals.

(*a*) *The Exportation of Live Animals.*

When one takes into consideration the gradual increase in the shortage of meat imports, the insufficient increase in the production of home stock, and the prohibition of the importation of live cattle for feeding or grazing purposes, one is almost compelled to believe that the combined effect of such circumstances justifies a halt in regard to the exportation of food animals.

In normal times trade through the exportation of live animals is not interfered with. For example, in the year 1913 no fewer than 6,551 cattle, 8,635 sheep, and 1,099 pigs were exported out of the United Kingdom. Of the total animals exported some 4,544 cattle, 6,799 sheep, and 1,093 pigs, valued at £384,809, went for breeding purposes, the remaining 2,007 cattle, 1,836 sheep, and 6 pigs, valued at £42,698, were exported for food purposes. The exportation of pedigree stock from this country to various parts of the world has been an important business for years, and the high prices obtainable have no doubt been the means, in many quarters at least, of stimulating still greater efforts in the improvement of the various breeds concerned.

(*b*) *The Importation of Live Animals.*

Under this heading it is proposed to deal almost exclusively with the question of

The Free Importation of Canadian Cattle.

The importation of live cattle from any specified country outside the United Kingdom, the Channel Islands, and the Isle of Man, to be disposed of in markets, marts, or other places within this country, either for grazing purposes or for slaughter, seems to be a question that a certain number of people, for some reason or other, appear to find it most convenient to deliberately refuse to consider.

It may be accepted that the chief, and perhaps the only legitimate reason, for not allowing the landing of cattle in this country for the purposes mentioned would be the existence within the particular country of export of one or more of the following diseases, namely:—

Rinderpest (cattle plague).

Bovine contagious pleuro-pneumonia, and

Foot-and-mouth disease.

We have within the British Empire an important country which can be justly singled out as a great imperial asset, not only in regard to the present, but particularly to the possibilities of the future, in the production of cattle and wheat, besides standing out as a fine example to the rest of the world on account of the unequalled standard attained in regard to the health of her live stock.

The country to which I refer is

Canada.

The Dominion of Canada, situated about 2,760 miles away, *i.e.*, from Liverpool to Montreal, or a voyage of only a few days, is a vast country. It extends westward from the Atlantic Ocean to the Pacific Ocean, and northward from the United States boundary into the Arctic circle, and embraces a total area of about 3,729,665 square miles.

The opening of our ports to Canadian farmers would prove to be a great stimulus to the increased production of cattle.

Whilst endeavouring to demonstrate the desirability or otherwise of importing cattle from Canada for exposure at our markets, it will be necessary to carefully consider:—

I. The conditions as to animal diseases and their prevention prevailing in countries contiguous to Canada.

II. The desirability of increasing the production of cattle in Canada for export.

III. The health of live stock in Canada and the precautions adopted to prevent the introduction of disease into that country.

IV. Whether, during recent years, any contagious disease has been detected amongst animals landed in this country from Canada and the United States and subject to inspection and slaughter at the ports.

I. When considering the possibilities of disease being introduced by land, *i.e.*, into Canada over the southern boundary from the United States, it will be necessary to briefly examine the past records besides the methods adopted to prevent the introduction of disease into that country.

The regulations of the United States require, in brief, that all horses, cattle, sheep, and other ruminants and swine, must be inspected before they are admitted, and, in addition, that all ruminants and swine from any part of the world except North America shall be quarantined.

Furthermore, so far as the risk of introducing disease into the herds of the United States is concerned, that appears to be reduced to a reasonable minimum, for in the words of the Secretary of Agriculture in his Annual Report for 1912, "Owing to the existence of communicable diseases of animals among the live stock of various parts of the world, importations from over the seas have been mainly restricted to Great Britain, Ireland, and the Channel Islands." Finally, neither cattle nor sheep have been imported into the United States of America from any country other than Canada, Mexico, and the United Kingdom since the year 1910.

Health of United States Cattle.

Now as to the existence of disease in the United States of America. It is generally believed that rinderpest (cattle plague) has never appeared in that country, and that contagious bovine pleuro-pneumonia was eradicated from her herds about twenty years ago.

With regard to foot-and-mouth disease, it may be stated that since the year 1897 until about a year ago, outbreaks have

occurred only at two different periods, one in 1902-3 and the other in the year 1908. The latter outbreak was stamped out in a few months. Unfortunately, however, during the past twelve months several outbreaks have occurred, but are being energetically dealt with by their large staff of trained veterinarians.

In briefly comparing the occurrence of outbreaks, it may be stated that in the United States outbreaks of foot-and-mouth disease have occurred during five separate years since 1897, whereas in Great Britain, during ten separate years within the same period, a total of 219 outbreaks have occurred in forty-eight counties. Furthermore, as showing the stringent precautions adopted by the United States for the control and against the exportation of diseased animals, it may be stated that during the last thirty years, which more than covers the period referred to, no fewer than 8,025,008 cattle, 3,009,751 sheep, and 4,354 pigs have been imported from the United States into this country and slaughtered at the ports of landing, but in no instance was any one of them found affected with foot-and-mouth disease. And as foot-and-mouth disease is the disease that really matters, these facts ought to be sufficient to remove all prejudice against Canadian cattle, if that prejudice be based on the fact that Canada adjoins the United States.

II. The desirability of increasing the production of cattle in Canada for export will be obvious when one bears in mind the huge corn crops produced in that country. For example, it will be generally admitted, I think, that where large crops are expected from the land it will be necessary, in order to be permanently successful, to produce live stock from which to obtain the natural manure, otherwise you starve the land.

The Health of Animals in Canada.

Reference will be made to the three diseases in rotation.

(1) Rinderpest (cattle plague) has never been seen in Canada.

(2) Bovine contagious pleuro-pneumonia has never been seen in Canada outside of the quarantine station at Quebec. Many years ago a number of cattle exported from England to Canada were found to be affected with the disease while undergoing their period of detention in that quarantine. Those cattle were promptly slaughtered, and no further cases have been seen or heard of in that country. In the years 1893, 1894, and 1895,

however, four, six, and two Canadian cattle, respectively, were condemned at our ports as being affected, but the Canadian authorities hold that it was never shown to their satisfaction that these animals were suffering from contagious pleuro-pneumonia.

(3) Foot-and-mouth Disease.—This disease is always more or less rampant on the continent of Europe, and has caused considerable trouble in England and Ireland during recent years. One might say that it is, of all animal diseases, the most highly contagious or infectious. It is reported to have existed in the province of Ontario in the year 1870, and to have been stamped out without occasioning any great loss. Since then that disease has not been found anywhere in Canada.

Again, according to statistics issued by the Board of Agriculture and Fisheries, we find that from the beginning of the year 1885 to November 21, 1892, an approximate total of 674,685 cattle, to January 1, 1896, a total of 715,874 sheep, and to January 1, 1897, a total of 1,573 swine were imported into this country from Canada, and were free to enter our markets and pastures.

Since those dates, however, 2,121,871 cattle, 651,838 sheep, and 150 swine, respectively, have been imported from Canada, but all have been compelled to be slaughtered at the ports of landing.

Finally, notwithstanding the fact that during the past thirty years no fewer than 2,796,556 cattle, 1,367,712 sheep, and 1,723 swine have been imported into this country from Canada, yet, with the exception of the 12 cattle alleged to be affected with bovine contagious pleuro-pneumonia twenty years ago, in no single instance has any one of those 4,165,991 animals been found to be affected with either rinderpest, bovine contagious pleuro-pneumonia, or foot-and-mouth disease.

One must not, therefore, be surprised to find that the policy pursued on this side of the Atlantic has been successful in so disheartening the Canadian stock producers that they have gradually decreased their shipments, with the result that since the year 1913 neither cattle, sheep, nor swine have been landed in this country from Canada.

In conclusion there are two points to be considered, either or both of which one might anticipate being urged as reasons

upon which to base objections to the free importation of Canadian cattle, namely:—

(1) The shipping from Canadian ports of cattle brought direct by rail from the United States may be considered an objection. Any such difficulty need not arise, for it would be only a matter for arrangement by the Canadian Government either to set apart certain ports to be used for United States cattle and no other, or to prohibit altogether the transit of United States cattle to any port in Canada for shipment.

(2) It might be urged that United States cattle would probably be entering Canada from time to time, and be shipped from Canadian ports as Canadian cattle.

That difficulty could be eliminated by defining Canadian cattle as being cattle which had immediately prior to shipment been continuously within the Dominion for a period of not less than, say, three months, and that during such period had not been allowed to come in contact with cattle, other ruminants, or swine which had not been continuously within the Dominion for a similar period and under similar isolation. Besides being an additional safeguard—should that be considered necessary—such a definition might be a further incentive to the breeding and rearing of cattle within the Dominion for export to Great Britain.

However, although more evidence seems scarcely necessary, these suggestions are only made with the view of illustrating the fact that the further one studies the subject the more one is convinced of the complete absence of any good reason for prohibiting the free importation of Canadian cattle into this country. —*Abridged for* THE VETERINARY JOURNAL. G. M.

[Mr. Parker has been in correspondence with Mr. F. Torrance, the Veterinary Director-General for Canada, and, as a result, thinks that owing to the good health of Canadian cattle and the effective measures taken against disease, it would be safe to allow of their importation into this country.]

Clinical Note.

A SHORT NOTE ON TWO CASES OF COITAL OR VESICULAR EXANTHEMA IN THE HORSE.

By HORACE L. ROBERTS, F.R.C.V.S.
Ipswich.

(1) SHIRE stallion, 5 years old. I was called to this animal on May 22, 1914. I found the penis and prepuce swollen. On the former organ there were more than thirty flat ulcers, which, on removal, showed a deep red base. On the prepuce I counted ten similar ulcers. The animal was feeding well; temperature 101° F.; testicles were not swollen.

I gave a dose of physic, and had the affected parts dressed twice daily with hyperchlor. solution, 1 in 3,000.

Recovery took place in twelve days.

(2) Suffolk stallion, 4 years old. I was called to this horse this year. I counted thirty-five ulcers on his penis, but there were none on his prepuce; testicles were not swollen.

Treatment as in the above case; recovery in fourteen days.

Each of these stallions, six days previous to the appearance of the eruption, had served a mare which the leaders noticed to be suffering from leucorrhœa. Doubtless other practitioners have seen similar cases of the disease, but I am not aware that any cases of the affection in Great Britain have been recorded.

[This disease has been seen in France, Germany, Austria, Hungary, Denmark, and Scandinavia. Hutyra and Marek state that stallions or bulls may transmit it without themselves being affected, also that the spread of the disease is facilitated by the fact that affected females show in the early stages of the disease symptoms resembling the period of œstrum, and consequently are taken to the male. Cattle, horses, sheep, goats, and pigs are susceptible in degree in the order named.—ED.]

Chemical Note.

HYPOCHLOROUS ACID SOLUTION.

AN EFFECTIVE AND INEXPENSIVE ANTISEPTIC PREPARATION.

By HORACE L. ROBERTS, F.R.C.V.S.
Ipswich.

(I) "ACCORDING to recent investigations, the hypochlorites are among the most potent germicides known, as compared with carbolic acid; for example, they are from 150 to 200 times more powerful. The fundamental weakness is that they rapidly lose strength in solution.

"Hypochlorous acid is more potent than its salts, and recent investigations have devised a method by which free acid may be employed as an antiseptic in the treatment of wounds.

"Finely pounded commercial bleaching powder (chloride of lime) and boric acid powder are mixed together in equal parts, and kept in a well-stoppered bottle away from daylight.

"To prepare the solution take 6 drm. and 15 gr. of this mixture and dissolve in $1\frac{3}{4}$ pints of water. Shake well, and let it stand for some hours, decant off the clear fluid, and a solution of hypochlorous acid is obtained.

"The solution remains effective for three weeks to a month, and contains '5 per cent. of hypochlorous acid.

"In this strength the solution applied to wounds kills organisms . . . with extreme rapidity, and causes no destruction of the tissue cells . . . .

"A free flow of lymph is also induced from the wound as part of the reaction of the tissues. (. . . .)

"The cost of a gallon of this solution is approximately one penny.

"The dry powder may also be employed for wounds; hypochlorous acid gas is then rapidly eliminated, and in larger quantities than from the solution. . . . . .

"Its use is especially indicated in affections of the limbs and feet . . . ."

The above remarks are the greater portion of an Army circular.

(II) Wallis Hoare, in his "Veterinary Therapeutics," third edition, p. 852, says: "The employment of sodium hypochlorite, combined with boric acid, as a dressing for wounds, is worthy of consideration here, as the agent is comparatively cheap and easily applied, and this author quotes H. D. Dakin, who gave particulars of his preparation of the agent in the *British Medical Journal*, August 28, 1915. Having had my attention drawn to the germicidal properties of the solution, and in view of the impossibility of obtaining certain continental products, I have recently used the solution whenever possible in general surgical work.

"As an aseptic, I find that it is superior to carbolic acid solution or lysol in the treatment of recent wounds, both accidental and surgical.

"In neglected wounds which have become septic or in part necrosed, irrigation with the solution three times daily for a few days causes healthy granulation of the parts, and a marked reduction of the size of the surrounding swellings.

"My experience with the dry powder has not been so satisfactory; nevertheless, I believe hypochlorous acid is a germicide which should be given an extended trial by the country practitioner who is often called in when a wound is thoroughly septic."

XUM

PARLIAMENTARY.

In the House of Commons, Wednesday, June 21.

Finance Bill: Motor Car Licences.

On Clause 11 (increased duty on licences for motor-cars), Mr. Montagu asked leave to withdraw the Clause. He stated that in originally putting the Clause in the Bill, the Government desired that there should be a reduction in the unnecessary use of motor-cars, and as a result a reduction in the use of petrol. They sought to effect that object by the imposition of a very heavy duty, hoping they would thereby succeed in reducing the number of licences taken out. Since the Budget was introduced a new departure had been made by the Government which would enable the Treasury to achieve the same object in a fairer way. The Petrol Control Committee appointed by the Board of Trade intended, he understood, to introduce a central control of petrol stocks, which were to be distributed only under permits issued by the central authority. They were now obtaining from consumers the average of their past consumption and estimates of future consumption. On those estimates they would issue a permit to each consumer entitling him to purchase a specified number of gallons of petrol for a specified purpose and for a specified period. It was proposed that, in order to get a permit from the Petrol Control Committee, the consumer should have to pay a licence duty of 6d. for every gallon which the permit enabled him to obtain. If he did not take the quantity of petrol out in the time he would be entitled to a refund. Commercial cars, doctors' cars, and cars used by veterinary surgeons would get their permits at half rates. A new resolution embodying the scheme would be introduced to-morrow.

Sir R. Finlay (Edinburgh and St. Andrews Universities, U.) remarked that the Government's proposal seemed to involve that surgeons and veterinary surgeons should be entitled to the abatement of one-half of the duty upon cars granted to doctors under the existing law. There was a strong case for a similar abatement being granted to clergymen, of whom he knew one who had a parish sixty miles long.

Sir F. Banbury (City of London, U.) remarked that if the suggestions which had been made were adopted there would be no revenue from the tax. He agreed that doctors and veterinary surgeons should be granted an abatement; their work was to alleviate suffering; but local authorities often caused suffering.

Mr. Montagu suggested that it would be better to keep separate the consideration of the permanent and temporary taxation on motor-cars. There were certain taxes on motor-cars which formed part of the ordinary revenue. But the tax now under consideration might be called a supertax on motor-cars for the duration of the War only. It was proposed to levy it in its new form by a temporary body, which would issue permits under the Defence of the Realm Acts.

Question: "That the Clause stand part of the Bill," put, and negatived.